REMARKS

In response to the Official Action mailed on November 29, 2006, the application has been amended to add new claims 31 - 33. No new matter has been added by this amendment. Reconsideration of the rejections of the claims is respectfully requested in view of the following remarks.

The Official Action of November 29, 2005 raises three different issues: (a) the withdrawal of claims 20 - 30 from consideration, (b) a provisional obviousness-type double patenting rejection of claims 18 and 19, and (c) the rejection of claims 18 and 19 under 35 USC 103. These issues will be discussed in succession below.

Withdrawal of claims 20 - 30 from consideration

On page 2 of the Official Action, claims 20 - 30 of the present application were withdrawn from consideration as supposedly being directed to inventions that are independent and distinct from the inventions previously claimed in the present application prior to the filing of an RCE.

The Applicant requests that the Examiner retract the withdrawal of these claims from consideration and to examine all of pending claims 20 - 30. MPEP 806.06 states that inventions as claimed are independent if there is no disclosed relationship between the inventions. However, as set forth below, every one of the claimed inventions has a disclosed relationship to one of the inventions as previously claimed, so the inventions being claimed prior to filing an RCE are not independent of the inventions being claimed after filing an RCE. As such, the two sets of claims are not independent and distinct.

The Official Action describes claim 17 as being the only claim that was examined in the present application prior to the filing of an RCE, but in fact, all of claims 1 - 17 were previously examined. It is all of these claims, not just claim 17, which should be the basis for determining what claims the Applicant is entitled to now have examined.

The following table shows a side-by-side comparison of the claims pending in the application before and after the filing of an RCE.

COMPARISON OF CLAIMS PREVIOUSLY EXAMINED AND CLAIMS NOW PENDING

Claims pending after filing RCE	Closest corresponding claim(s) examined prior to filing RCE
17. Solder of claim 18 consists of Cu, Co, Ni, and Sn	17. Solder of claim 1 consists of Cu, Co, Ni, and Sn
18. A solder consisting essentially of Cu, Co, Ni (optional), and Sn	1. A solder comprising Cu, Co, Ni (optional), and Sn 12. Solder of claim 1 consists essentially of Cu, Co, Ni (required), and Sn
19. Solder of claim 18 includes 0.01 - 1 % of Ni	2. Solder of claim 1 includes 0.01 - 1 % of Ni
20. Solder of claim 18 includes at least one of P, Ge, and Ga	4. Solder of claim 1 includes at least one of P, Ge, and Ga

21. Solder of claim 18 includes 0.05 - 2 % of Ag	6. Solder of claim 1 includes 0.05 - 2 % of Ag
22. A coil precoated with lead-free solder of claim 18	7. A coil precoated with lead-free solder of claim 1
23. Soldering method: soldering precoated end of coil of claim 22 to another member	9. Soldering method: soldering precoated end of coil of claim 7 to another member
24. Method - dip an end of a coated copper wire in molten solder of claim 18	10. Method - dip an end of a coated copper wire in molten solder of claim 1
25. Solder of claim 18 consists of Cu, Co, and Sn	16. Solder of claim 1 consists of Cu, Co, and Sn
26. Solder of claim 18 consists of Cu, Co, Ag, and Sn	6. Solder of claim 1 includes 0.05 - 2 % of Ag
27. Solder of claim 18 consists of Cu, Co, Ni, Ag, and Sn.	13. Solder of claim 1 consists essentially of Cu, Co, Ni, Ag, and Sn
28. Solder of claim 18 consists of Cu, Co, (P, Ge, Ga), and Sn	4. Solder of claim 1 includes at least one of P, Ge, and Ga
29. Solder of claim 18 consists of Cu, Co, Ni, (P, Ge, Ga), and Sn	4. Solder of claim 1 includes at least one of P, Ge, and Ga
30. Solder of claim 18 consists of Cu, Co, Ni, Ag, (P, Ge, Ga), and Sn	-

From this table, it can be seen that each of claims 20 - 29 is either the same as or else a narrowed version of a claim that was already examined, the narrowing being primarily that "comprising" or "consisting essentially of" has been changed to "consisting essentially of" or "consisting of".

Specifically, claims 20 - 24 recite exactly the same limitations as did previously examined claims 4, 6, 7, 9, and 10, respectively. The only difference between these two sets of claims is that claims 20 - 24 ultimately depend from a claim which "consists essentially of" Cu, Co, (Ni) and Sn (claim 18), whereas claims 4, 6, 7, 9, and 10 ultimately depended from a claim which "comprised" Cu, Co, (Ni) and Sn (claim 1). The result is the same as if the Applicant had simply amended old claim 1 to change "comprising" to "consisting essentially of". The difference between claims 20 - 24 and previously examined claims 4, 6, 7, 9, and 10 is thus identical to the difference between claim 18 and previously examined claim 1. Since claim 18 is now being examined, it is appropriate for claims 20 - 24 to be examined at the same time.

As described below, the Official Action treats claim 18 as being identical in scope to previous claim 1. Namely, the Official Action treats the language "consisting essentially of" in claim 18 as having the same meaning as "comprising" in claim 1. If claim 18 and claim 1 are to be treated by the Official Action as being identical in scope, it is inconsistent for the Official Action to then treat claims 20 - 24 as somehow defining a different invention from that described by previous claims 4, 6, 7, 9, and 10. If the Examiner feels that claims 20 - 24 define a different invention from previous claims 4, 6, 7, 9, and 10, then claim 18 must be treated as having a different scope from claim 1.

As far as the work load on the Examiner, examination of claims 20 - 24 would not require that a new search be conducted. In rejecting claims 18 and 19, the most recent Official Action relied upon JP 55-20403, which is the very same reference relied upon to reject previous claims 1 - 6, 8, and 11 - 13. Since claims 20 and 21 add the very same limitations to claim 18 as previous claims 4 and 6 added to claim 1, the same search as was used to examine claims 4 and 6 can still be applied to examination of claims 20 and 21.

The same applies to claim 22, 23, and 24. As shown by the above table, these claims add the same limitations to claim 18 that claims 7, 9, and 10 added to claim 1. In rejecting claims 7, 9, and 10, the Examiner relied upon the combination of JP 55-20403 and the description of the Related Art in the Applicant's specification. Since the primary reference remains the same, and since the added claim limitations in the two sets of claims are the same, examination of claims 22, 23, and 24 does not require any search beyond that already employed for examination of claims 7, 9, and 10.

As shown by the above table, claim 25 is identical in scope to previously examined claim 16, so it should naturally be examined at the present time.

Claim 26 is merely a narrowed version of previous claim 6, which recited a composition comprising Cu, Co, (Ni), Ag, and Sn. Since the Examiner has already performed a search for a composition containing the components Cu, Co, Ag, and Sn, no additional search is required for an examination of claim 26.

Claims 27 is merely a narrowed version of previous claim 13. Claim 13 recited a solder consisting essentially of Cu, Co, Ni, Ag, and Sn, while claim 27 recites a solder alloy consisting of the same components in the same proportions. Since examination of claim 13 has already entailed a search for art containing the elements Cu, Co, Ni, Ag, and Sn in specific amounts, no further search is required for examination of claim 27.

Claim 28 is but a narrower version of previous claim 4. Claim 4 described an alloy comprising Cu, Co, (Ni), one of (P, Ga, Ge), and Sn, while claim 28 describes an alloy which consists of Cu, Co, one of (P, Ge, Ga), and Sn. Since the examination of claim 4 has already involved a search for an alloy containing the elements Cu, Co, one of (P, Ga, Ge), and Sn, no new search is required for examination of claim 28.

Similarly, claim 29 is merely a narrower version of previous claim 4. As stated above, claim 4 described an alloy comprising Cu, Co, (Ni), one of (P, Ga, Ge), and Sn, while claim 29 describes an alloy consisting of Cu, Co, Ni, one of (P, Ga, Ge), and Sn. In previous examination, the same reference (JP 55-20403) was applied both against claims in which Ni was optional (claim 1, for example), and claims in which Ni was mandatory (claims 2 and 13, for example). Therefore, even though Ni was optional in claim 4 and is required in claim 29, no additional search is required because the previous search covered both situations.

Claim 30 is the only claim which does not have a close counterpart in the previously examined claims. Namely, while previous examination has entailed a search for an alloy containing all of Cu, Co, Ni, Ag, and Sn (claim 13), the Examiner may not yet have searched for an alloy containing these elements and further containing, at the same time, at least one of P, Ge, and Ga. However, claim 30 is not independent of the previous product claims. Like previous claims 1 - 6 and 11 - 17, it relates to a composition useful for coating of copper wires and containing at least Cu, Co, Ni, and Sn. Thus, it is not independent and distinct of the previously claimed inventions and should be examined along with claims 20 - 29.

The purpose of the Applicant in filing an RCE was to further pursue the allowance of the claims previously filed by way of presenting the Examiner with evidence (a declaration), arguments for the allowability of the claims, and amendments. There are basically only three ways in which it is possible to amend a claim to a composition: (a) to restrict the numerical ranges of components already recited in the claim, (b) to add additional components to the claim, or (c) to exclude the presence of certain components by using language such as "consisting of". By deciding not to examine any of claims 20 - 30, the Examiner is preventing the Applicant from employing two out of the three possible methods of claim amendment. Specifically, by withdrawing claims 20, 21, and 26 - 30 from consideration, the Examiner is preventing the Applicant from employing method (b) of adding further elements not listed in claim 18, and by withdrawing claims 25 - 30 from consideration, the Examiner is barring the Applicant from employing method (c) of restricting what elements can be included in the claimed invention. Surely the PTO did not intend the RCE program to become handcuffs for an applicant which so limit an applicant's options in amending the claims as to render the filing of an RCE meaningless, particularly given the considerable expense involved in the filing of an RCE.

Accordingly, it is believed appropriate and reasonable for all of claims 20 - 30 to be examined at the present time.

Provisional obviousness-type double patenting rejection of claims 18 and 19

On page 4 of the Official Action, claims 18 - 19 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1 - 12 of copending Patent Application No. 10/824,647.

This provisional rejection is respectfully traversed as improper on two grounds.

Firstly, the premise of the rejection appears to be incorrect. The Official Action states that claims 18 and 19 of the present application are overlapped by the claims of the copending application, but the Applicant cannot find any overlap in the scope of the two sets of claims, since there are components in the two sets of claims which do not abut, coincide, or in any way overlap each other. For example, the content of Cu is totally different in the two applications.

Secondly, even if the premise stated in the Official Action were correct, it would still not establish a *prima facie* case of obviousness. An obviousness-type double patenting rejection is in essence no different in form from any other obviousness rejection and must meet the same requirements. Thus, any obviousness-type double patenting rejection should make clear: (A) the differences between the inventions defined by the conflicting claims; and (B) the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claims at issue would have been an obvious variation of the invention defined by the other claims. See MPEP 804. A mere conclusory statement, such as "the claims are overlapped", does not satisfy the requirements set forth in the MPEP.

As such, the provisional obviousness-type double patenting rejection of claims 18 and 19 fails to set forth a *prima facie* case of obviousness and so is inappropriate. Withdrawal of this rejection is respectfully requested.

Rejection of claims 18 and 19 under 35 USC 103(a)

On page 4 of the Official Action, claims 18 and 19 were rejected under 35 USC 103(a) as unpatentable over JP 55-20403. This rejection is respectfully traversed.

Claim 18 describes an alloy consisting essentially of 1.5 - 8 mass % of Cu, 0.01 - 2 mass % of Co, 0 - 1 mass % of Ni, and a remainder of Sn, while dependent claim 19 specifies that the alloy contains 0.01 - 1 mass % of Ni. In rejecting claims 18 and 19, the Official Action treated the language "consisting essentially of" as being identical in meaning to "comprising". Thus, the rejection of these claims raises two issues. The first issue is the proper meaning to be accorded to "consisting essentially of" in claim 18. The second issue is whether claim 18 could be properly rejected on the basis of JP 55-20403 if it were assumed, merely for the sake of argument, that "consisting essentially of" in claim 18 were identical in meaning to "comprising".

The issue of the proper interpretation of "consisting essentially of" in claim 18 will be addressed first. The expression "consisting essentially of" in a claim is typically defined as meaning that the invention necessarily includes the listed components and is open to unlisted components that do not materially affect the basic and novel properties of the invention. *PPG Industries Inc.* v. *Guardian Industries Corp.*, 48 USPQ2d 1351, 1353 (Fed. Cir. 1998). A composition containing at least 10 mass % of Au, which is required by JP 55-20403, is excluded by the language "consisting essentially of" because the addition of 10 mass % or more of Au would materially affect the basic and novel properties of the invention described by claim 18.

At the time of filing an RCE in connection with the present application, the Applicant submitted a declaration under 37 CFR 1.132 concerning the properties of an alloy as set forth in claim 18. As stated in paragraph 12 of the declaration, among the basic and novel characteristics of an alloy consisting essentially of 1.5 - 8 mass % of Cu, 0.01 - 2 mass % of Co, 0.01 - 1 mass % of Ni, and a remainder of Sn are that it has a very low tendency to cause copper leaching when used to precoat coil ends of thin copper wire and that it has a cost comparable to that of conventional lead-free solders for coating of copper wires. (The declaration addresses the properties of an alloy having a composition as set forth in claim 19, containing 0.01 - 1 mass % of Ni. However, the specific properties which are discussed in the declaration are shared by an alloy having a composition as set forth in claim 18, which contains 0 - 1 mass % of Ni. Therefore, the declaration will be considered to apply equally to claims 18 and 19). As demonstrated in paragraphs 14 and 15 of the declaration, the minimum unit cost of an alloy disclosed by JP 55-20403 is 92 to 276 times the unit cost of conventional alloys for coating copper wires. According to paragraph 16 of the declaration, this difference is a highly significant difference and renders an alloy falling within the scope of JP 55-20403 totally unsuitable for the intended use of the present invention, i.e., for coating copper wires.

Since as set forth in the declaration the cost is among the basic and novel characteristics of an alloy consisting essentially of 1.5 - 8 mass % of Cu, 0.01 - 2 mass % of Co, 0.01 - 1 mass % of Ni, and a remainder of Sn, and since the addition of 10 mass % or more of Au would materially affect this characteristic, the addition of at least 10 mass % of Au is excluded from claim 18 by the language "consisting essentially of". Since every alloy disclosed in JP 55-20403 requires at least 10 mass % of Au, it follows that every alloy set forth in JP 55-20403 is excluded from the scope of claim 18.

Concerning the declaration under 37 CFR 1.132, page 6 of the Official Action states that

> "Applicants in instant remarks and declaration argue that the cost of JP '403 solder material would materially affect the basic and novel characteristics of claimed alloy. But applicants fail to show what properties of the claimed solder are affected. The cost of the solder might affect its utilities but not the basic and novel characteristics of the solder."

This statement in the Official Action appears to indicate a misreading of the declaration. The Applicant did not "fail to show what properties of the claimed solder are affected", because paragraph 12 of the declaration expressly states that among the basic and novel characteristics of an alloy consisting essentially of 1.5 - 8 mass % of Cu, 0.01 - 2 mass % of Co, 0.01 - 1 mass % of Ni, and a remainder of Sn are that it has a cost comparable to that of conventional lead-free solders for coating of copper wires, and paragraph shows that the addition of at least 10 mass % of Au, as required by JP 55-20403, would materially affect this characteristic.

In light of the above-quoted statement on page 6 of the Official Action, the position of the Examiner appears to be that the cost of an alloy is not and cannot be a basic and novel property of an alloy. However, there is no reason why cost should not be so considered. Cost is definitely a property or characteristic (the Federal Circuit uses "properties" and "characteristics" interchangeably in this regard) of an alloy as these terms are used in ordinary English. For example, *The American Heritage College Thesaurus* (Houghton Mifflin Co., first edition, 2004) defines property as "a distinctive element" and gives characteristic, feature, and trait as synonyms. It is reasonable to describe it as a *basic* property of an alloy according to the present invention, for paragraph 16 of the declaration explains that if the cost of an alloy is too high, the alloy is unsuitable for the intended use of the present invention. The fact that cost is a basic property of the present invention is further emphasized by page 9, lines 16 - 19 of the present application as filed, which puts an upper limit on the content of Ag in the present invention due to cost considerations. While cost may not be a physical or chemical property of an alloy, the Federal Circuit has never limited "properties" to physical or chemical ones.

In regards to the "novel properties" of the invention of claim 18, none of the cited prior art patents, including JP 55-20403, possesses the combined features of a low tendency to cause copper leaching when used to precoat copper wires and a low material cost which is comparable to that of conventional alloys used for this purpose. As set forth above, the minimum unit cost of an alloy disclosed by JP 55-20403 is 92 to 276 times the unit cost of conventional alloys for coating copper wires Thus, the novel properties of an alloy according to claim 18 would clearly not be possessed if 10 mass % or more of Au were added to this alloy, as required by JP 55-20403.

An ingredient has a material effect on the characteristics of a product if the effect is of importance or consequence to those of ordinary skill in the art of making the product. *PPG Industries* at 1354 (where the Federal Circuit relied upon the definition of "material effect" employed by the district court in the trial decision being appealed).

As set forth in paragraph 16 of the declaration filed on September 4, 2005, the addition of 10 mass % or more of Au to an alloy containing only 1.5 - 8 mass % of Cu, 0.01 - 2 mass % of Co, 0.01 - 1 mass % of Ni, and a remainder of Sn would have an effect of great importance to a person skilled in the art. Namely, it would render the alloy prohibitively expensive and totally unsuited for its intended use of coating copper wires.

Thus, it can be seen that the addition of 10 mass % of Au to the composition of claim 18 would materially affect the basic and novel properties of the invention set forth in this claim. As such, any composition containing at least 10 mass % of Au (which includes all of the compositions disclosed by JP 55-20403) are excluded by the language of claim 18 and of claim 19 which depends therefrom.

For nearly 60 years now, the Board of Appeals, the CCPA, and the Federal Circuit have defined "consisting essentially of" as excluding materials which would materially affect the "basic and novel" properties or characteristics of an invention. However, the expression "basic and novel" has never itself been defined. Indeed, the Federal Circuit has described "consisting essentially of" as having an "ambiguous nature". *A K Steel Corp. v. Sollac*, 68 USPQ2d 1281, 1283 (Fed. Cir. 2003). Therefore, even while nominally espousing the words "basic and novel properties", the Board and the courts, rather than treating these words as a formula of Boolean logic, have taken more of a gestalt approach, treating "basic and novel properties" as the overall character of an invention. For example, in *In re De Lajarte*, 143 USPQ 257, 258 (CCPA 1964), the CCPA treated "basic and novel" as synonymous with "basic or novel". In *Water Technologies Corp. v Calco Ltd.*, 7 USPQ2d 1097, 1102 (Fed. Cir. 1988), the Federal Circuit whittled "consisting essentially of" down to meaning that "it does not, however, exclude the addition of another ingredient which does not materially affect the characteristics of the invention". In *In re Herz and Willis*, 190 USPQ 461, 463 (CCPA 1976), the CCPA affirmed the Board of Appeals in a decision in which the Board stated that consisting essentially of "excludes materials that would have a deleterious effect".

Even what is thought to be the first published opinion to interpret the language "consisting essentially of" construed the words "basic and novel" loosely. In *Ex parte Davis and Tuukanen*, 80 USPQ 448, 450 (Patent Office Board of Appeals 1948), the Board defined the words "consisting essentially of" according to a code of terms adopted by a group of Primary Examiner, which read as follows:

> (3) recital of "essentially" along with "consisting of" [is regarded] as rendering the claim open only for the inclusion of unspecified ingredients which do not materially affect the basic and novel characteristics of the composition.

However, when the Board then applied this definition, it interpreted "basic and novel characteristics" as referring to the "fundamental character" of the invention:

> In the present case where the claims recite three ingredients and the reference discloses four, the important question is whether the term "consisting essentially of" excludes that fourth ingredient. We think that it does, since the "modifier" *materially changes the fundamental character* of the three-ingredient composition of claims 13, 14 and 16. [Emphasis added]

In light of the above-described manner in which "consisting essentially of" has actually been analyzed by the Board and the courts, it appears clear to the Applicant that the use of the language "consisting essentially of" in claim 18 excludes the addition of 10 mass % or more of Au (as required by JP 55-20403) since doing so would indeed change the fundamental character of the composition defined by the claim by rendering it unusable for all practical purposes for its intended purpose of coating of copper wires.

Turning now to the second issue, the Applicant respectfully submits that even if claim 18 used the transitional language "comprising", it would still not be obvious from JP 55-20403.

As stated above, claim 18 describes a lead-free solder consisting essentially of 1.5 - 8 mass % of Cu, 0.01 - 2 mass % of Co, 0 - 1 mass % of Ni, and a remainder of Sn. JP 55-20403 does not suggest to a person skilled in the art the specific composition set forth in claim 18 on account of the vast number of compositions which this reference potentially covers.

JP 55-20403 discloses a brazing material for use in connecting external parts of a watch. The brazing material comprises 10 - 85% Au, 15 - 90% Sn, and it may further include one or more of Ni, Ag, P, Co, Ca, Mn, Rd, Pt, Ph, Sb, Se, and Te. This generic description covers 2047 unique combinations of these alloying elements, and yet the only specific compositions which the reference discloses are an Au-Sn binary alloy, an Au-Sn-Ni alloy, and an Au-Sn-Mn alloy. There is nothing in this reference to guide a person skilled in the art to select a Sn-Cu-Co-(Ni) composition as set forth in claim 18 of the present application from the 2044 other compositions encompassed by the generic disclosure of the reference.

The Official Action cites a number of cases for the proposition that a generic description necessarily renders a specific composition encompassed by that description obvious. Specifically, the Official Action cites *In re Gyurik*, 210 USPQ 552 (CCPA 1979); *In re May*, 197 USPQ 601 (CCPA 1978); *In re Hoch*, 166 USPQ 406 (CCPA 1970); *Ex parte Raychem Corp.*, 17 USPQ2d 1417 (BPAI 1990); *Merck & Co. v. Biocraft Lab. Inc.*, 10 USPQ 2d 1843

(CAFC 1983); *Ex Parte A*, 17 USPQ2d 1716 (BPAI 1990); *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990); and *In re Susi* 169 USPQ 423 (CCPA 1971). The Applicant respectfully submit that these cases are either not truly on point or not relevant on account of being outdated. The case which is believed to be most relevant to this situation is believed to be *In re Baird*, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994). As the Federal Circuit set forth in that case, the fact that a claimed substance may be encompassed by a disclosed generic formula does not by itself render that substance obvious. That decision makes clear that it is inadequate for a reference to merely disclose a generic formulation describing a vast number of choices which happen to include a claimed composition. Rather, there must be teachings in the reference that suggest selecting the specific composition set forth in a claim.

Just as was the case in *In re Baird*, the primary reference being cited in the present application (JP 55-20403) contains a generic description which contains an extremely large number of compounds, yet there is nothing in this reference to guide a person skilled in the art to select a Sn-Cu-Co-(Ni) composition as set forth in claim 18 of the present application from the thousands of compositions included within its generic disclosure. In order for the alloy recited in claim 18 to be obvious, there must be some specific suggestion in JP 55-20403 to select this combination of alloying elements from the enormous number of possible combinations covered by the generic disclosure of the reference. Since this reference contains no such suggestion, JP

55-20403 cannot render claim 18 or any of the claims which depend from it obvious.

Page 7 of the Official Action quotes *Ex Parte A*, in which the BPAI stated that every one of the ten thousand compounds listed in the tenth edition of Merck Index is described, as that term is used in 35 USC 102(a), as are the 1.5 million compounds disclosed in the Beilstein Handbook. However, the issue in *Ex parte A* was whether the disclosure of the name of a specific compound in a reference anticipated the formula for that compound in an application, given that the formula would be known to a person skilled in the art from the name of the compound. That is not the issue here. There is no contention that JP 55-20403 actually discloses the composition set forth in claims 18 or 19, only that it discloses a broad generic formula. Therefore, *Ex parte A* does not appear relevant to the present situation.

Thus, whether "consisting essentially of" in claim 18 is properly construed so as to exclude the presence of 10 or more mass % of Au as required by JP 55-20403, or whether it is improperly construed so as to be equivalent to "comprising", claim 18 and claim 19 which depends therefrom cannot be obvious from JP 55-20403 and should be allowed.

Allowability of claims 20 - 30

Claims 20 - 30, which were temporarily withdrawn from consideration, are allowable as depending from claim 18 and are allowable in their own right.

Claim 21 states that the solder of claim 18 contains 0.05 - 2% of Ag. In JP 55-20403, the minimum permissible content of Ag is 3%. Page 10 of JP 55-20403 specifically states that if the Ag content is less than 3% or greater than 48%, the object of its invention cannot be achieved. This reference thus clearly teaches away from an Ag content of less than 3% and so cannot suggest the range for Ag set forth in claim 21.

Claims 22 - 24 pertain to using the solder of claim 18 for coating an end of a copper wire. The only use described in JP 55-20403 for the brazing material disclosed therein is for joining external parts of a watch to each other, such as to join a watch band to a watch case, or to join a pipe for receiving a winding stem to the watch case. A person skilled in the art could find no teachings in JP 55-20403 to suggest using the materials generically encompassed by this reference to coat an end of a wire. Every alloy disclosed in JP 55-20403 is an Au-based alloy containing a minimum of 10% and up to 85% of Au. This high Au content makes the brazing material of JP 55-20403 vastly more expensive than any material which a person skilled in the art would conceive of using for coating a copper wire. This fact is supported by paragraph 17 of the declaration under 37 CFR

1.132 filed on September 4, 2005, which explains that from the standpoint of a person skilled in the art, the brazing material of JP 55-20403 is totally impractical for use in coating the ends of copper wires, and therefore no one skilled in the art could be motivated by the reference to use it for that purpose.

Claims 25 - 30 each describe a composition consisting of a plurality of elements, none of which includes Au. Since at least 10% of Au is an essential component of JP 55-20403, none of the compositions set forth in these claims is suggested by the reference. These claims are therefore allowable.

New claims 31 - 33 describe additional features of the present invention. Each of these claims is supported by Table 1 on page 12 of the specification as filed. For each of the ten different examples of the alloys according to the present invention given in Table 1, the Sn content of the alloy is a minimum of 90 mass %. Furthermore, for nine of the examples, the Sn content is at least 93 mass %, and for seven of the examples, the Sn content is at least 95 mass %. Thus, the Applicant was clearly in possession of the claimed subject matter of claims 31 - 33 as of the filing date of the present application. These claims are allowable as depending from claim 19. It is to be noted that the Sn-Au base brazing material disclosed in JP 55-20403 requires a minimum of 10 % Au, so any alloy of JP 55-20403 further containing any components besides Sn and Au necessarily contains less than 90 % Sn and so cannot satisfy the requirements of any of claims 31 - 33.

In light of the foregoing remarks, it is believed that the present application is in condition for allowance. Favorable consideration is respectfully requested.

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